

WHAT IS CLAIMED IS:

1. A communication link protocol for communicating between nodes of an interconnect system via a communication link, the communication link protocol comprising:

5 a direct memory access (DMA) command for writing a block of data from a local node to a remote node via the communication link;

an administrative write command for writing data from a local node to registers in a remote node via the communication link for administrative purposes;

a memory copy write command for writing a line of memory from a local node to a remote node via the communication link when any data is written into that line of memory; and

a built in self test (BIST) command for testing the functionality of the communication link.

2. The communication link protocol of Claim 1 wherein each command is conveyed between a local node and a remote node in the form of a respective command packet.

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3. The communication link protocol of Claim 2 wherein each respective command packet carries information for at least one command flag.

4. A communication link protocol for communicating between nodes of an interconnect system via a communication link, the communication link protocol comprising:

5 a built in self test (BIST) communication issued from a local node to a remote node for testing hardware at the remote node via the communication link; and

a link watchdog communication issued from the local node to the remote node for testing hardware at the remote node via the communication link.

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5. The communication link protocol of Claim 4 wherein the BIST communication is issued automatically.

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6. The communication link protocol of Claim 4 wherein, if the hardware of the remote node is functioning properly, an acknowledge communication is returned from the remote node to the local node in response to the BIST communication.

7. A communication link protocol for communicating
20 between nodes of an interconnect system via a communication link, the communication link protocol comprising:

25 a first sixteen bits of data and a first two bits of error-correcting code transferred at a first edge of a clock signal from a first node to a second node via the communication link;

a second sixteen bits of data and a second two bits of error-correcting code transferred at a second edge of the clock signal from the first node to the second node via the communication link;

5 a third sixteen bits of data and a third two bits of error-correcting code transferred at a third edge of the clock signal from the first node to the second node via the communication link; and

 a fourth sixteen bits of data and a fourth two bits of error-correcting code transferred at a fourth edge of the clock signal from the first node to the second node via the communication link.

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8. The communication link protocol of Claim 7 wherein data is transferred between the first and second nodes in the form of quadwords, and wherein four bits of a quadword are transferred over a line of the communication link at four consecutive edges of a clock signal, each of the four bits belonging to the same nibble, wherein all nibble errors are 20 detectable by the error-correcting code.

9. A communication link protocol for an interconnect system, the communication link protocol utilizing packets of a fixed size to transfer data between nodes of the interconnect 25 system, the communication link protocol comprising:

a first command flag issued from a local node to a remote node, the first command flag for incrementing a counter at the remote node, the counter supporting a command queue at the remote node; and

5 a second command flag issued from the local node to the remote node, the second command flag for resetting the counter at the remote node.

GPO : 1995 OMB : 1995 GPO : 1995